



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/757,519	01/09/2001	Craig R. Horne	N19.12-0051	8679

7590 02/07/2007  
Peter S. Dardi, Ph.D.  
PATTERSON, THUENTE, SKAAR & CHRISTENSEN, P.A.  
4800 IDS Center  
80 South 8th Street  
Minneapolis, MN 55402-2100

EXAMINER
----------

JOHNSON, EDWARD M

ART UNIT	PAPER NUMBER
----------	--------------

1754

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/07/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

09/757,519

Applicant(s)

HORNE ET AL.

Examiner

Edward M. Johnson

Art Unit

1754

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-3, 6-10, 17 and 22-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 10, 17, 22 and 24-26 is/are rejected.
- 7) ☒ Claim(s) 6-9 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

Art Unit: 1754

**DETAILED ACTION**

1. Applicant's arguments filed 10/20/06, with respect to the rejection have been fully considered and are persuasive, with respect to the section of the reference previously relied upon. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of a different section of Koksbang '214, Koksbang '880, and also the new reference, Takamuki et al. US 5,556,738.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Koksbang '214.

Regarding claims 1 and 17, Koksbang '214 discloses a battery comprising metal vanadium oxide particles (abstract) of "submicron" size (see column 6, lines 7-8), which would inherently be an average diameter less than 1 micron.

4. Claims 1-2, 17, 24, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Koksbang '880.

Art Unit: 1754

Regarding claims 1 and 17, Koksbang '880 discloses a battery comprising metal vanadium oxide particles (abstract) of 0.1-5 microns (see column 5, lines 4-6).

Regarding claims 2, 24, and 26, Koksbang '880 discloses 0.1-5 microns (see column 5, lines 4-6).

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-3 and 10, 22, and 24-26 are rejected under 35 U.S.C. 102(b) as being anticipated by Takamuki et al. US 5,556,738.

Regarding claim 1, Takamuki '738 discloses fine particles comprising mixed metal oxide having a particle size (see column 5, lines 21-23) and specifically vanadium pentaoxide (see column 5, lines 51-52).

Regarding claim 10, Takamuki discloses a method of producing fine particles comprising mixed metal oxide including vanadium oxide having a particle size of 1-300 (see column 5,

Art Unit: 1754

lines 21-23) and specifically 30 nm for vanadium pentaoxide (see column 5, lines 51-52), wherein the particles are mixed at a temperature of 30-80 degrees Celsius.

Takamuki fails to specifically disclose an average diameter of less than about 1 micron.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use an average diameter of less than about 1 micron, including 5-50 nm, because Takamuki '738 discloses fine particles comprising mixed metal oxide including vanadium oxide having a particle size of 1-300 (see column 5, lines 21-23) and specifically 30 nm for vanadium pentaoxide (see column 5, lines 51-52), and a gelatin shell of 1-500 nm which is previously cross-linked to increase miscibility (see column 5, lines 58-60 and 65-66).

Regarding claim 22, Takamuki discloses

Regarding claims 2-3 and 24-26, Takamuki '738 discloses specifically 30 nm for vanadium pentaoxide in the disclosed mixed metal oxide (see column 5, lines 51-52).

***Allowable Subject Matter***

7. Claims 6-9 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 1754

8. The following is a statement of reasons for the indication of allowable subject matter: In view of the prior art and specifically the patented claims of record (i.e. see Applicant's terminal disclaimer) and generally, the specifically claimed particle distributions would not have been obvious to one of ordinary skill in the art at the time the invention was made in the particles of the instant claims 6-9, nor the batter of the instant claim 23.

#### **Conclusion**


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Edward M. Johnson whose telephone number is 571-272-1352. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on 571-272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status

Art Unit: 1754

information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Edward M. Johnson  
Primary Examiner  
Art Unit 1754

EMJ